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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/748,391	12/27/2000	David Ian Allen	92118-17	3774

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EXAMINER	
GOLD, AVI M	
ART UNIT	**PAPER NUMBER**
2157	3

DATE MAILED: 06/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/748,391	ALLEN, DAVID IAN	
	Examiner	Art Unit	
	Avi Gold	2157	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 December 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This action is responsive to the application filed December 27, 2000. Claims 1-22 are pending. Claims 1-22 represent a method, device and software for ensuring path diversity across a communications network.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5, 9, 15-17, 21, and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Tomizawa et al., U.S. Patent No. 6,202,082.

Tomizawa teaches the invention as claimed including trunk transmission systems in which communication involves setting up paths semi-permanently on physical transmission lines (see abstract).

Regarding claim 1, a method of establishing a subsequent path across a network to be used to transport traffic carried along an initial path in the event of a failure or signal degradation on said initial path, said method comprising:

receiving a digest representative of resources used along said initial path, each of said resources along said initial path known by at least one node on said initial

path (col. 4, lines 6-25; Tomizawa discloses a control channel exchanging control signals with other nodes);

establishing said subsequent path, using said digest so that said subsequent path may use resources distinct from said resources used along said initial path (col. 4, lines 6-25; Tomizawa discloses a path setup in accordance with the required service class).

Regarding claim 5, the method of claim 1, wherein each of said nodes on said initial path contributes knowledge known thereat to form said digest (col. 4, lines 6-25; Tomizawa discloses path setup methods based on nodes).

Regarding claim 9, a method of forming a digest of information representative of network resources along a path, comprising at each node along said path, adding to said digest, an indicator of resources used by said path and known to that node (col. 4, lines 6-25; Tomizawa discloses intermediate nodes placing a stamp on a packet based on bandwidth availability).

Regarding claim 21, a node on a communications network operable to establish a secondary path across said network, said secondary path capable of carrying traffic carried along an initial path, in the event of a fault or signal degradation along said initial path, said node operable to use a digest representative of resources used along said initial path in establishing said secondary path, each of said resources along said initial

path known by at least one node on said initial path, so that said subsequent path may be established using resources distinct from said resources used along said initial path (col. 2, lines 34-62; Tomizawa discloses paths re-routed around a failure; col. 4, lines 6-25; Tomizawa discloses a control channel exchanging control signals with other nodes).

Regarding claim 22, computer readable medium storing processor executable instructions that when loaded at a node capable of establishing a path on a network, adapt said node to pass an indicator of resources used along an established path and known to said network node to an adjacent node on said established path (col. 4, lines 6-25; Tomizawa discloses a control channel exchanging control signals with other nodes and a path setup in accordance with the required service class).

Claims 15-17 do not teach or define any new limitations above claim 1 and therefore are rejected for similar reasons.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2-4, 6-8, 10-14, and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomizawa further in view of Furlani, U.S. Patent No. 5,813,000.

Tomizawa teaches the invention substantially as claimed including trunk transmission systems in which communication involves setting up paths semi-permanently on physical transmission lines (see abstract).

As to claim 2, Tomizawa teaches the method of claim 1.

Tomizawa fails to teach the limitation further including the use of a Bloom filter to represent resources known to each node.

However, Furlani teaches a novel B tree structure and method (see abstract). Furlani shows evidence of the use of Bloom filters (col. 4, lines 66-67; col. 5, lines 1-19).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Tomizawa in view of Furlani to use a Bloom filter to represent resources. One would be motivated to do so because Bloom filters use little memory, which would allow it to function as a resource digest without interfering with network performance.

As to claim 3, Tomizawa and Furlani teach the method of claim 2.

Tomizawa fails to teach the limitation further including the Bloom filter having a fixed number of bits.

However, Furlani teaches the use of a Bloom filter with 40 bits based on a bucket size of 10 (col. 8, lines 27-34).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Tomizawa in view of Furlani to use a Bloom filter with a fixed number of bits. One would be motivated to do so because it would allow for a more efficient hash function.

As to claim 4, the method of claim 3, further comprising adding information representing said resources along said initial path to said Bloom filter at each of said nodes (col. 4, lines 6-25; Tomizawa discloses decisions made based on available bandwidth).

As to claim 6, the method of claim 4, wherein said initial path extends from an originating node to a terminating node on said network, and said digest is received at said originating node (col. 4, lines 6-25; Tomizawa discloses path setup done prior to transmission of information).

As to claim 7, the method of claim 6, wherein said digest is received as a part of a message confirming establishment of said initial path (col. 4, lines 6-25; Tomizawa discloses a path setup allowing a route to be confirmed by a control channel).

As to claim 8, the method of claim 7, wherein said establishing comprises providing said digest to each node along said subsequent path (col. 4, lines 6-25).

As to claim 13, the method of claim 12, wherein said resources comprise physical resources used along said path (col. 4, lines 6-25; Tomizawa discloses bandwidth availability)

As to claim 14, the method of claim 13, wherein said resources comprise at least one of physical port and a physical interconnect used by said path (col. 4, lines 6-36; Tomizawa discloses a token protocol and routes based on network configuration).

Claims 10-12 and 18-20 do not teach or define any new limitations above claims 2, 3, 6, and 7 and therefore are rejected for similar reasons.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 5,931,916 to Barker et al.

U.S. Pat. No. 6,205,146 to Rochberger et al.

U.S. Pat. No. 6,542,461 to Faye et al.

U.S. Pat. No. 6,563,798 to Cheng.

U.S. Pat. No. 6,594,235 to Rochberger et al.

U.S. Pat. No. 6,202,124 to Kern et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Avi Gold whose telephone number is 703-305-8762. The examiner can normally be reached on M-F 8:00-5:30 (1st Friday Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ario Etienne can be reached on 703-308-7562. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Avi Gold

Patent Examiner

Art Unit 2157

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